

Claims

[c1] An isolated nucleic acid molecule selected from the group consisting of: (a) a nucleic acid molecule having at least about 34 nucleotides wherein said nucleic acid molecule hybridizes with a nucleic acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:38, and SEQ ID NO:39; and (b) a nucleic acid molecule having at least about 30 nucleotides wherein said nucleic acid molecule hybridizes with a nucleic acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:37, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, wherein said nucleic acid molecule of (a) or (b) hybridizes under conditions comprising (i) hybridizing in a solution comprising 2X SSC and 0% formamide at a temperature of 37 ° C and (ii) washing in a solution comprising 1X SSC and 0% formamide at a temperature of 52 ° C.

[c2] The nucleic acid molecule of Claim 1, wherein said nucleic acid molecule is selected from the group consisting of nECR₂₈₂₂, nECR₁₆₈₀, nECR₄₁₄₈, nECR₁₆₈₃, nUSP₁₇₄₉, nUSP₁₃₄₄, nUSP₁₉₇₅ and nUSP₁₄₂₂.

[c3] The nucleic acid molecule of Claim 1, wherein said nucleic acid molecule is selected from the group consisting of: (a) a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:37, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43; and (b) a nucleic acid molecule comprising an allelic variant of a nucleic acid sequence of (a).

[c4] The nucleic acid molecule of Claim 1, wherein said nucleic acid molecule is selected from the group consisting of: a nucleic acid molecule comprising a nucleic acid sequence encoding a protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:14, SEQ ID

NO:27, SEQ ID NO:33, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:66, SEQ ID NO:67, SEQ ID NO:68, SEQ ID NO:69, SEQ ID NO:70, and SEQ ID NO:71; and a nucleic acid molecule comprising an allelic variant of a nucleic acid molecule encoding a protein having any of said amino acid sequences.

- [c5] A recombinant molecule comprising a nucleic acid molecule as set forth in Claim 1 operatively linked to a transcription control sequence.
- [c6] A recombinant cell comprising a nucleic acid molecule as set forth in Claim 1.
- [c7] A method to produce a protein, said method comprising culturing a cell transformed with a nucleic acid molecule selected from the group consisting of: (a) a nucleic acid molecule having at least about 34 nucleotides wherein said nucleic acid molecule hybridizes with a nucleic acid sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:10, SEQ ID NO:15, SEQ ID NO:18, and SEQ ID NO:39; and (b) a nucleic acid molecule having at least about 30 nucleotides wherein said nucleic acid molecule hybridizes with a nucleic acid sequence selected from the group consisting of SEQ ID NO:28, SEQ ID NO:31, SEQ ID NO:34, SEQ ID NO:37, SEQ ID NO:41 and SEQ ID NO:43, wherein said nucleic acid molecule of (a) or (b) hybridizes under conditions comprising (i) hybridizing in a solution comprising 2X SSC and 0% formamide at a temperature of 37 ° C and (ii) washing in a solution comprising 1X SSC and 0% formamide at a temperature of 52 ° C.
- [c8] The method of Claim 7, wherein said transformed cell is selected from the group consisting of *E. coli*:pGEX-nECR₆₁₂, *E. coli*:pTrc-nUSP₇₁₈ and *E. coli*:pGEX-EcR₆₁₂-USP₉₄₃.
- [c9] The method of Claim 7, wherein said protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:14, SEQ ID NO:27, SEQ ID NO:33, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:66, SEQ ID NO:67, SEQ ID NO:68, SEQ ID NO:69, SEQ ID NO:70, and SEQ ID NO:71, and an amino acid sequence encoded by a nucleic acid molecule comprising an allelic variant of a nucleic acid molecule encoding any of said amino acid sequences.
- [c10] A composition comprising an excipient and an isolated nucleic acid molecule

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selected from the group consisting of: (a) a nucleic acid molecule having at least about 34 nucleotides wherein said nucleic acid molecule hybridizes with a nucleic acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:38, and SEQ ID NO:39; and (b) a nucleic acid molecule having at least about 30 nucleotides wherein said nucleic acid molecule hybridizes with a nucleic acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:37, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43, wherein said nucleic acid molecule of (a) or (b) hybridizes under conditions comprising (i) hybridizing in a solution comprising 2X SSC and 0% formamide at a temperature of 37 ° C and (ii) washing in a solution comprising 1X SSC and 0% formamide at a temperature of 52 ° C.

[c11] The composition of Claim 10, wherein said nucleic acid molecule is selected from the group consisting of nECR₂₈₂₂, nECR₁₆₈₀, nECR₄₁₄₈, nECR₁₆₈₃, nUSP₁₇₄₉, nUSP₁₃₄₄, nUSP₁₉₇₅ and nUSP₁₄₂₂.

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[c12] The composition of Claim 10, wherein said nucleic acid molecule is selected from the group consisting of: (a) a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:37, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, and SEQ ID NO:43; and (b) a nucleic acid molecule comprising an allelic variant of a nucleic acid sequence of (a).

[c13] The composition of Claim 10, wherein said nucleic acid molecule is selected from the group consisting of: a nucleic acid molecule comprising a nucleic acid sequence encoding a protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:14, SEQ ID NO:27, SEQ ID NO:33, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:66, SEQ ID NO:67, SEQ ID

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NO:68, SEQ ID NO:69, SEQ ID NO:70, and SEQ ID NO:71; and a nucleic acid molecule comprising an allelic variant of a nucleic acid molecule encoding a protein having any of said amino acid sequences.